



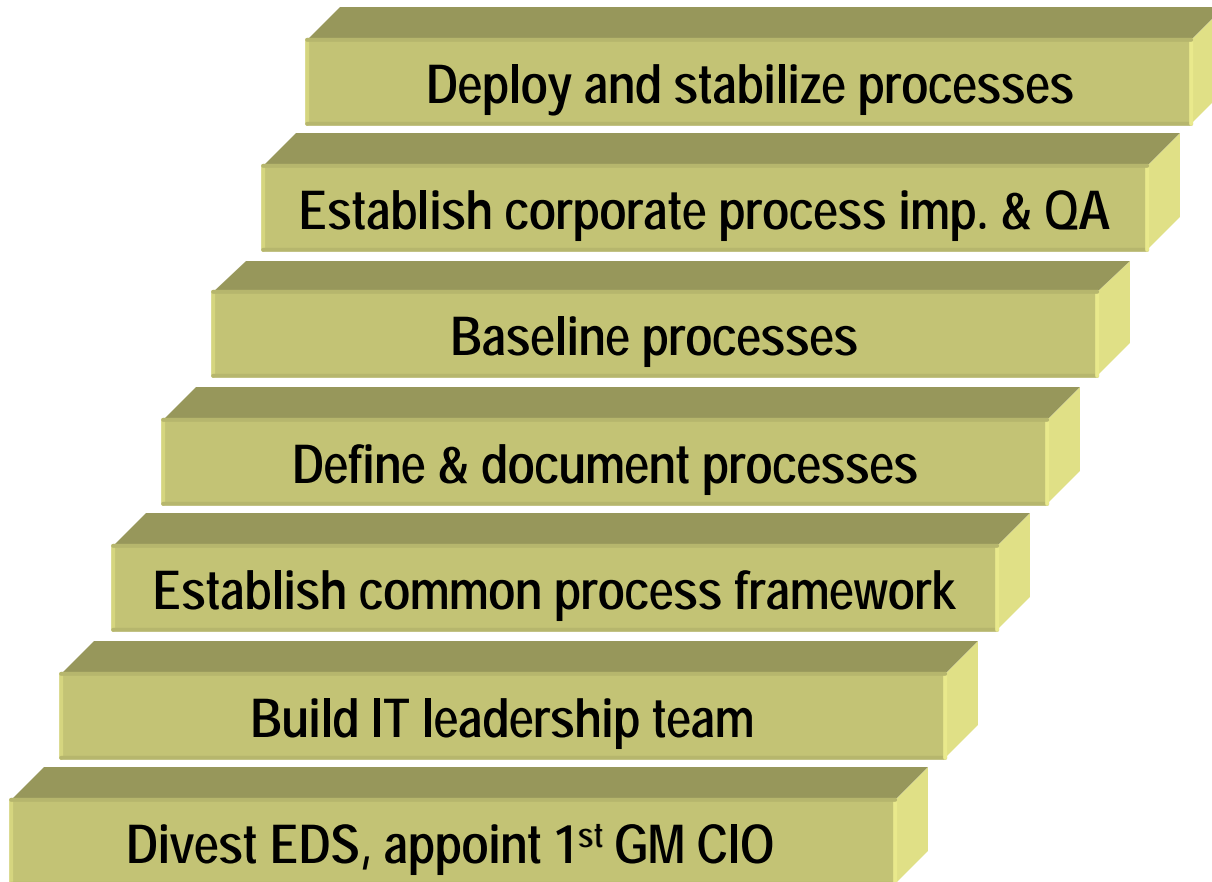
General Motor's Journey to IT Process Excellence

Adopting a CMMI-Style Improvement Approach for Key IT Processes

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General Motors Corporation

The Journey to Process Excellence

2001



Define & Improve:

- skills
- training
- compliance
- activity & perf. based metrics
- expectations
- communication

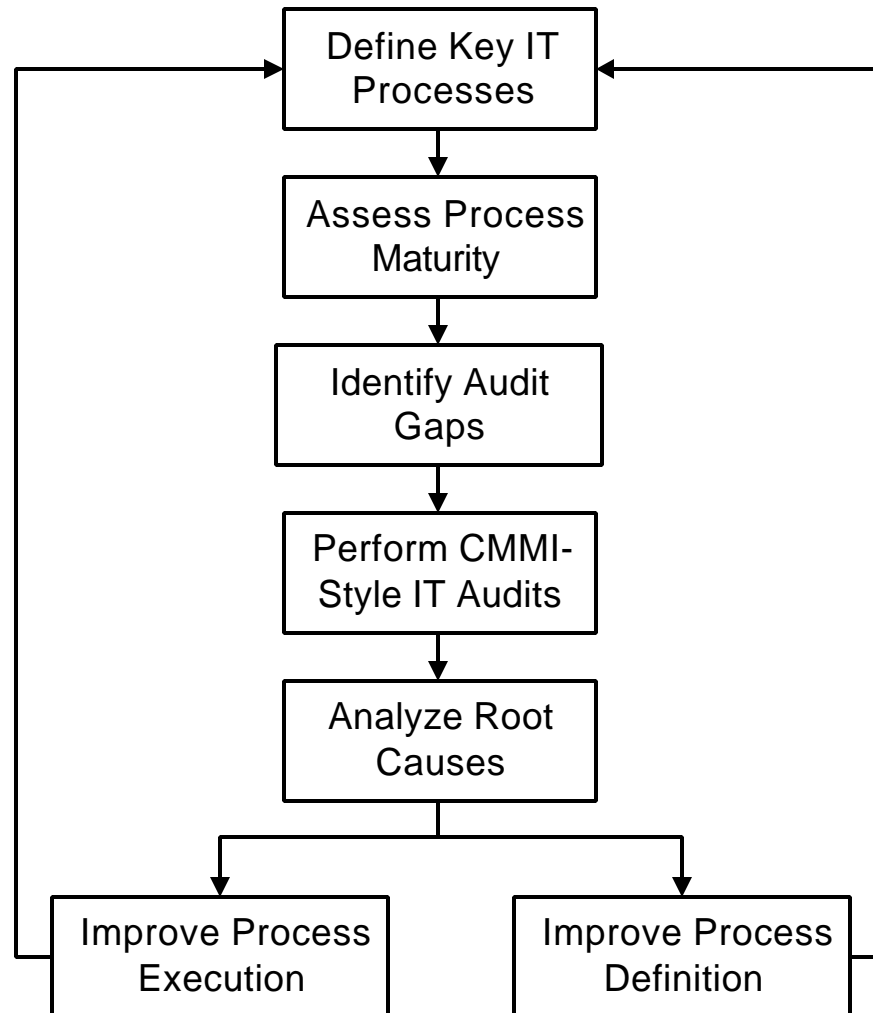
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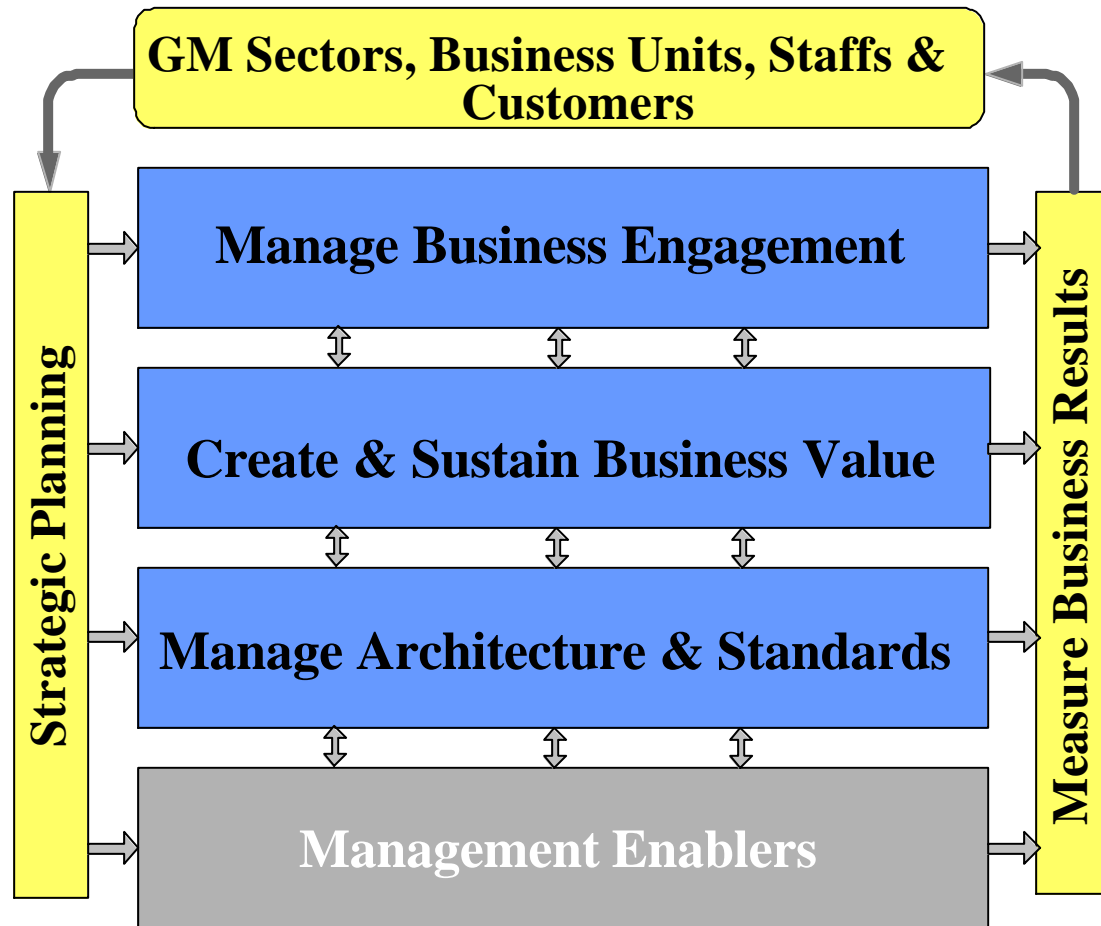
Why CMMI?

- GM CIO mandate for global, common processes
- Desired IT capabilities and maturity of IT organization
- Common assessment across key processes in a global IT organization.
- Integrated vision of process improvement
- Leverage industry best practices and incorporate GM-specific practices in standard improvement framework

Adopting CMMI-Style Improvement Approach



Framework for Key IT Processes





IS&S Process Homepage - Netscape

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IS&S Internal Processes Homepage

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IS&S Process Model:

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Assess Process Maturity: Illustrative Example

	Commitment	Ability	Directing Implementation	Verifying Implementation	Process Maturity
Core IT Process 1					
Planning	3.0	3.0	3.0	1.0	3.0
Monitoring & Control	2.0	2.0	3.0	3.0	2.0
Requirements Management	3.0	2.0	3.0	3.0	3.0
Supplier Agreement Management	3.0	3.0	2.0	2.0	2.0
etc.	3.0	1.0	3.0	2.0	2.0
Process Maturity	3.0	2.0	3.0	2.0	2.0

User Defined Symbol Set		
Satisfied	3.0	
Mostly Satisfied	2.0	
Some Evidence	1.0	
Not Satisfied	0.0	

Assess Process Maturity: Illustrative Example

User Defined Symbol Set	
Satisfied	● 3.0
Mostly Satisfied	◐ 2.0
Some Evidence	◑ 1.0
Not Satisfied	◒ 0.0

	Commitment	Ability	Directing Implementation	Verifying Implementation	Process Maturity
Core IT Process 1					
Planning	●	●	●	◑	●
Monitoring & Control	◐	◐	●	●	◐
Requirements Management	●	◐	●	●	●
Supplier Agreement Management	●	●	◐	◐	◐
etc.	●	◑	●	◐	◐
Process Maturity	●	◐	●	◐	◐

Supplier Mgmt.	Process Definition
SP2.3	4.6 Conduct Testing (monitor supplier results and conduct internal testing) 3.6 Develop Test Cases (review and approve test cases)

Reference to
Process Homepage

Assess Process Maturity: Illustrative Example

User Defined Symbol Set	
Satisfied	3.0
Mostly Satisfied	2.0
Some Evidence	1.0
Not Satisfied	0.0

	Commitment	Ability	Directing Implementation	Verifying Implementation	Process Maturity
Core IT Process 1					
Planning	3.0	3.0	3.0	1.0	3.0
Monitoring & Control	2.0	2.0	3.0	3.0	2.0
Requirements Management	3.0	2.0	3.0	3.0	3.0
Supplier Agreement Management	3.0	3.0	2.0	2.0	2.0
etc.	3.0	1.0	3.0	2.0	2.0
Process Maturity	3.0	2.0	3.0	2.0	2.0





































Reference to
Process Homepage





Supplier Mgmt.	Process Definition	Score	CMMI Gap
SP2.3	4.6 Conduct Testing (monitor supplier results and conduct internal testing) 3.6 Develop Test Cases (review and approve test cases)	2	Re-emphasize acceptance testing

CMMI Coverage:
0 (not satisfied) to
3 (satisfied)

Improvement
Area

Assess Process Maturity: Illustrative Example

	Core Process 1	Core Process 2	Core Process 3	Enabling Process 4	Enabling Process 5	Process Maturity
Process Areas						
Planning						
Monitoring & Control						
Requirements Management						
Supplier Agreement Management						
etc.						
Process Maturity						

User Defined Symbol Set	
Satisfied	 3.0
Mostly Satisfied	 2.0
Some Evidence	 1.0
Not Satisfied	 0.0

Identify Audit Gaps: Illustrative Example

User Defined Symbol Set		
Covered	✓	3.0
Mostly Covered	+	2.0
Some Coverage	◇	1.0
Not Covered	■	0.0

	Commitment	Ability	Directing Implementation	Verifying Implementation	Audit Coverage of Process Definition
Core IT Process 1					
Planning	✓	+	✓	+	+
Monitoring and Control	+	✓	✓	✓	✓
Requirements Management	✓	+	✓	◇	+
Supplier Agreement Management	✓	✓	+	✓	✓
etc.	✓	+	✓	✓	✓
Audit Coverage of Process Definition	✓	+	✓	+	+

Reference to Audit Questionnaire

Supplier Mgmt.	Audit Question	Audit Coverage	Audit Gap
SP 2.3	Have criteria & process for product acceptance been defined?	2	Methods used for detailed review of supplier responses

Audit Coverage:
0 (not covered) to
3 (covered)

Improvement
Area



Perform CMMI-Style IT Audits

- Measure organizational awareness & compliance to IS&S policies and key IT processes
- 15-25% quarterly sample of approx. 1700 IS&S employees and strategic project portfolio
- Corporate QA leads audits (interviews and deliverable reviews)
- Audit tool to enable consistent, on-site data capture and real-time data analysis

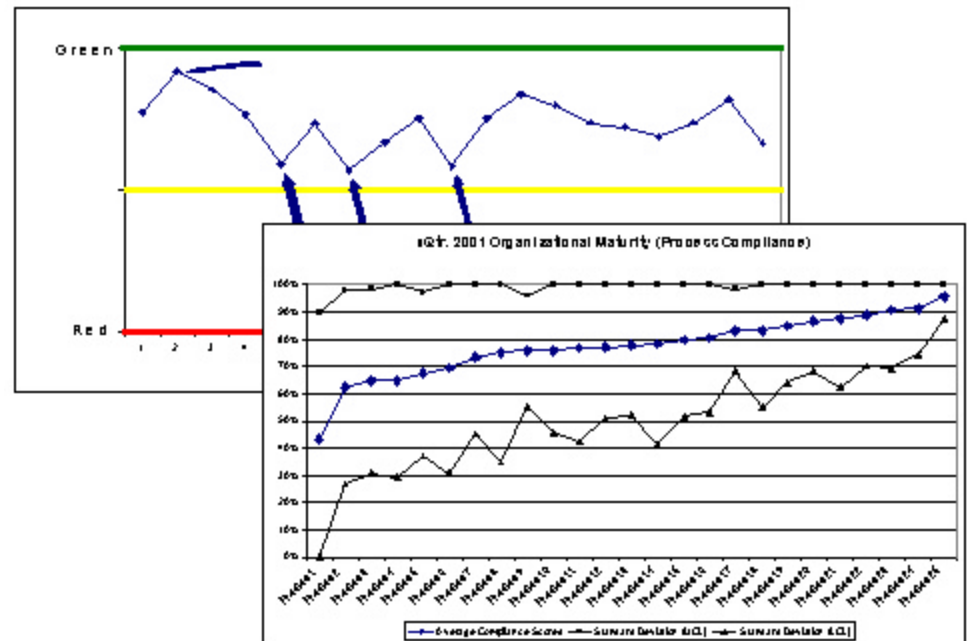


CMMI-Style IT Audits: Scorecards

Sector:	IS&S Corporate				Auditor:	Zahira Gonzalvo			
Bus. Area:	Business Area XYZ				Dates:	09/04/2001-09/10/2001			
Site:	Detroit MI				CIO:	Mr. John Doe			
Element #	Question	Proc 1	Proc 2	Proc 3	Proc 4	Proc 5	Proc 6	Proc 7	Total
1	General Awareness								
1.1	Commitment	N/A	N/A	N/A	N/A	N/A	N/A	100%	100%
1.2	Ability To Implement	94%	94%	94%	97%	97%	97%	N/A	95%
	General Awareness Average	94%	94%	94%	97%	97%	97%	100%	96%
2	Compliance								
2.1	Commitment	100%	N/A	N/A	N/A	100%	N/A	Inc	100%
2.2	Ability To Implement	100%	N/A	N/A	83%	N/A	N/A	Inc	92%
2.3	Directing Implementation	94%	N/A	N/A	94%	100%	N/A	Inc	96%
2.4	Verifying Implementation	100%	N/A	N/A	100%	N/A	N/A	Inc	100%
	Compliance Average	98%	N/A	N/A	92%	100%	N/A	Inc	97%
	Overall Average	96%	94%	94%	95%	98%	97%	100%	

Analyze Root Causes

- Combine several metrics and audit results
- Blend “soft data” and “hard facts”
- Gradually increase analysis capability

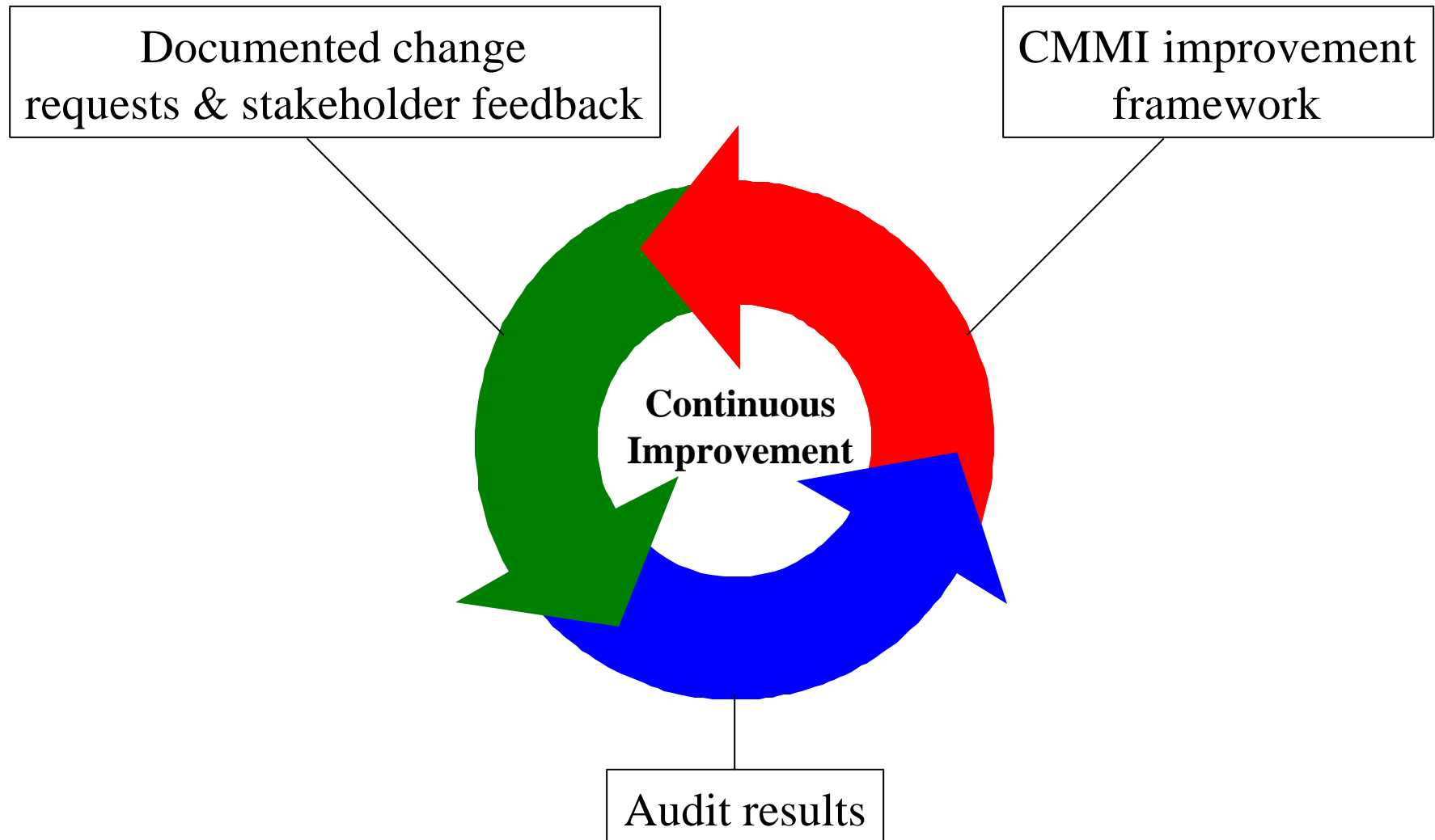




Analyze Root Causes: Reports

- Results from Audits and Root Cause Analysis are reported to:
 - VP/CIO Global Report
 - Information Officers - Process Execution Report
 - Process Owners - Process Capability Report
 - Project Managers and Site Managers

Improve Process Definition





Improve Process Execution

- Active project management offices drive systemic improvements in IS&S matrix organization:
 - coordinate and conduct compliance assessments
 - define and coordinate training (GM University)
 - coordinate “Go Fast” improvement workshops
 - develop and monitor process improvement plans



Implementation Challenges

- Remember: This is a journey!
- Riding the wave of change (denial, anger, etc.)
- Gaining and maintaining leadership support & accountability
- Keeping focus & constancy of purpose
- Metrics & scorecards drive behavior and must evolve with the organization
- Tailor/reveal CMMI according to the organization's capability
- Perform consistent audits across the organization